should return to play in a contact league after injury.[15] Indeed, as Stephen Anderson reminds us, these principles should apply not only to ice hockey but to all sports.

Ultimately, a multifaceted approach that incorporates the elimination of bodychecking, enforcement of rules, engineering advances in materials and education holds the greatest promise for making hockey a safer game.

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Prehospital intubation and SARS

Richard Verbeek and associates[1] conclude that "paramedics should not intubate patients with SARS-like symptoms in the prehospital setting," presumably because of the risk of contracting severe acute respiratory syndrome (SARS). I disagree with this sweeping prohibition.

First, the only evidence provided that such intubations pose a risk is a single case report,[2] which did not even involve paramedics. That intubation occurred in the intensive care unit of a teaching hospital and was anything but typical. The procedure was prolonged, and both bilevel positive airway pressure and high-frequency oscillatory ventilation were used, procedures likely to create a viral aerosol and considered unacceptably dangerous by physicians experienced in the treatment of SARS (H. Dwosh and H. Wong, Department of Medicine, York Central Hospital, Richmond Hill, Ont.: personal communication, 2003). In contrast, many straightforward intubations of patients with SARS were performed without incident during the Toronto outbreak.

Second, the authors make no attempt to quantify the risk to paramedics. Instead, their recommendation is based on the conclusion that it is difficult to follow the procedures required by the provincial government's directive.[3] However, this directive is not evidence-based. A more reasonable conclusion would be that the Ontario government directive is impractical and should be reconsidered.

Third, the authors fail to place SARS-like illness into an epidemiological context. Obviously, SARS is a meaningful risk only in communities that are experiencing a SARS outbreak. At the moment, this does not apply anywhere on the planet. Even in a community that is experiencing a SARS outbreak, the probability that a prehospital patient who has "SARS-like symptoms" and who requires prehospital intubation actually has the disease is small. If it can be ascertained that the patient is not a hospital worker or a recently discharged (within 10 days) inpatient, the probability becomes very small indeed.

There is no reason to believe that a straightforward intubation of a low-risk patient poses an unacceptable risk to paramedics using reasonable and practical precautions. This risk analysis applies to the great majority of prehospital intubations during a SARS outbreak and, at present, it applies to all prehospital intubations throughout the world.

The sweeping recommendation of Verbeek and associates[1] will compromise patient care while offering no benefit to paramedics. This is just the latest example of a self-inflicted wound from our misguided response to SARS.[4]

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Unfortunately, I cannot agree with Richard Verbeek and associates[1] that paramedics should not intubate patients with SARS-like symptoms in the prehospital setting. If we applied their logic to certain other clinical scenarios, paramedics would never, for example, insert an intravenous line for fear of contracting HIV infection. A reliable history of HIV risk factors is difficult to obtain in the field, and the uncontrolled circumstances in which paramedics

work increase the risk of needle-stick injury. If the rule is that no risk to the provider is acceptable, regardless of the benefit to the patient, very few interventions in the field would be possible.

In fact, the greatest life-threatening occupational hazard for paramedics is trauma from motor vehicle crashes. If the approach suggested by Verbeek and associates were extended to transportation risks, paramedics would never exceed posted speed limits, would never proceed through a red light and might not venture out on a dark, snowy night at all.

The authors' analysis does a disservice to the brave men and women, dedicated professionals all, that I have encountered in this discipline.

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The recommendation of Richard Verbeek and associates[1] that paramedics not intubate patients with SARS-like symptoms in the prehospital setting and that such patients be transported to the nearest emergency department derives from the flawed premise that all situations necessitating definitive airway management are identical in terms of the level of inherent threat to paramedics. This is not the case.

Part of the preparation for performing any endotracheal intubation in the field is a risk–benefit assessment of the procedure in that instance. The paramedic must determine whether the patient is likely to benefit from the procedure, whether the patient is likely to suffer an adverse outcome without it and whether performing the procedure in the field poses an unacceptable risk to paramedics and others.

The difficulty posed by SARS is that the risk of disease transmission during endotracheal intubation seems high, yet it cannot be quantified, and reports of widespread vector transmission with resultant disease outbreaks among medical staff in attendance at these procedures are anecdotal.

Ultimately, I believe that the final decision on intubation of patients with SARS-like symptoms should rest with those charged with the responsibility for performing the procedure, the advanced care paramedics, just as it does for all other procedures and types of care that they render every day. Paramedics are well trained and generally proficient in making critical decisions under enormously stressful conditions. Furthermore, they are held accountable for their actions and accept this scrutiny as part of their work environment.

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As the author of an unpublished report on personal protective equipment (PPE, consisting of double gowns, double gloves, Tyvek hood, N95 mask, goggles and face shield for airway management of a possible SARS patient) prepared for the Sunnybrook Paramedic Program Committee, I was asked by Richard Verbeek to comment on the *CMAJ* commentary[1] recommending that paramedics not intubate patients with SARS-like symptoms, with or without a personal protective system (also known as a positive-pressure system or PPS; described in Appendix A of an Ontario Ministry of Health directive[2]).

Verbeek and associates[1] conclude that paramedics should provide ventilatory support by using a bag valve mask (BVM) rather than intubation. I assert that it is not possible to consistently maintain a BVM seal in the prehospital environment. Consequently, neither intubation nor BVM ventilation is safe when performed by people using standard PPE. A ministry of health directive to Ontario hospitals states that a patient with a suspected communicable respiratory disease is to be placed in isolation and that no ventilatory assistance is to be attempted until a "protected team" using PPS is available.[2]

A recent email survey of Toronto paramedics, the foundation of my report, indicated that the "new normal" standard of PPE as used in hospitals fails to protect paramedics in their unique work environment. In fact, PPE frequently had to be removed because of dangerous fogging and severe shortness of breath.

Should paramedics discontinue all interventions involving respiratory assistance? The seemingly obvious conclusion is that paramedics need better head and face protection, which should, at the very least, decrease vision problems, aid in heat dissipation and not impede breathing. The only type of product with these attributes is a PPS.

I have undertaken a field trial of a powered helmet-style PPS with a disposable hood (FreedomAire PPS, ViaSys Healthcare, Stackhouse Division, Wheeling, Ill. [www.corpakmedsystems.com/products/stackhouse/helmet.htm], distributed in Canada by Summit Technologies; the cost of helmet, fan and battery is just under $1000, and the disposable mini-togas cost $250 for 12). The helmet, mini-toga and battery can be easily carried by a paramedic at all times. During normal intubations the helmet is used with a face shield and an N95 mask, but without the filtering toga. In high-risk situations the mini-toga hood is donned to offer better protection (99.9% viral filtration) and improved visibility; it is also cooler than the Tyvek hoods supplied as standard PPE.